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ABSTRACT

Arizona businesses are facing a dearth of skilled workers. The work force deficit is about quantity and about quality. It is both an immediate problem and a long-term problem. It is a threat to business competitiveness and Arizona's competitive advantage, and it challenges both industry and government to find solutions. Currently the State of Arizona is expanding work force development by establishing a new Governor's Council on Workforce Development Policy and an Office of Workforce Development Policy in the Arizona Department of Commerce to coordinate the existing myriad of independent, overlapping programs and services. Arizona is also creating a system that connects work force development and economic development activities, and the state is creating a system that tightly links industry to the design and ownership of work force programs and services. The Greater Phoenix Economic Council could take a greater role in work force development by providing leadership, coordinating various programs, recruiting talent from Mexico, and working with business and government to promote and develop needed skills. (An appendix provides charts, graphs, and other transparency masters for a presentation on work force development needs in Arizona and Phoenix.) (KC)

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The Achilles Heel of Future Economic Growth:

The Workforce Development Challenge

What Is It?

How Critical Is It?

Who's Doing What to Address It?

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Introduction

Fierce competition for workers is one of the top issues today in Arizona. Many people may be surprised to hear that anything related to the state's economic situation is on a list of pressing issues. Our economy is booming. The state is one of the country's hottest job machines. Unemployment is the lowest in two decades. Companies and people continue to move to Arizona in record numbers. But now come signs of a new era; as Arizona's economy is and remains robust, the state is finding it difficult to supply workers in demand by industry.

- Newspapers carry up to 46 pages of help wanted ads with large sections devoted to health care professionals, software engineers, and telemarketers.
- High technology companies such as Motorola and Intel report that they reject as many as 9 out of 10 job seekers for want of needed skills.
- Some companies have increased entry level wages by 50 percent to compete for employees.
- Workforce problems are causing Arizona companies to decide not to expand locally and some are even choosing to move elsewhere to find workers.
- Local firms are increasingly critical of economic development organizations for actively courting and successfully recruiting new companies to the state which compete with them for workers.

The results of the above factors is a new but deep threat to our economic future. Businesses' inability to find and retain the workers they need, where they will need them, may in fact be the spear that unexpectedly pierces the state's prosperity.

Of course, Arizona does not stand alone. Wherever one goes in the United States, it is impossible not to hear something about workforce development. From construction workers to high-tech talent, there is a "squeeze." One expert believes it is not hyperbole to say human capital is "the next great American Deficit."[1]

The fact that Arizona does not face this issue alone, however, does not lessen the importance or urgency of addressing it. The workforce, its abilities and capabilities, is fast becoming the most important competitive weapon in economic development. Many people share the opinion that soon the key differentiator among states and cities may actually be who can deliver the right people when and where industry needs them.

What is happening in Arizona's economy is only beginning to dawn on most Arizonans. It is hard to imagine that good news about the economy is bad news for workforce development. Yet, the possibility of an "economic growth squeeze" and the need to address it soon have never been more clear. This report is meant to provide both a basis for understanding the

scale and importance of the workforce development issue and a basis for shaping a response vis-a-vis public policy, business practices and individual responsibility.

The need for such a document surfaced during the Greater Phoenix Economic Council's Economic Summit XII held April 21, 1998. The topic for discussion was the critical factors a region needs to remain competitive in the global economy of the next century and how Greater Phoenix ranks in those factors. The Summit's 400 participants and panel of industry experts not only reinforced the importance of workforce for competitive advantage but also raised the need for a broader understanding of the issues, problems and solutions. GPEC, in response, commissioned this report to serve as a starting point for productive dialogue and concerted action. The report is not a labor forecast or tactical "how-to" guide on improving the workforce in Arizona; these are the tasks of others. The intention of this report is to alert all Arizonans that the workforce issue has a new urgency in the state, and that multiple players have roles in addressing problems.

A Clear Message: Workforce is Critical

One newspaper reporter characterized the theme that emerged during GPEC's Summit as "Businesses are confronted with a dearth of skilled workers."[2] That message came in several ways. Each of the speakers representing four of Arizona's clusters—high technology, bioindustry, software, environmental technology and food, fiber and natural products—stressed the workforce challenge. Keynote speaker and futurist Rob McCord assured them that their concern cuts across the entire county and that most thoughtful business leaders in America now are justifiably alarmed about the availability of good, well-trained, well-motivated and affordable people. The results of a survey conducted for the Summit bolstered their observations. A quality workforce is the single most important factor for global competitiveness, according to about 140 respondents to a one-page survey sent out with the Summit invitations.

The survey asked key public, private, and non-profit leaders in the Greater Phoenix area to rate nine factors in terms of importance for global competitiveness and to rank Greater Phoenix on the same factors. The nine factors included: (1) workforce quality and quantity; (2) accessibility to domestic and global markets; (3) taxes/regulatory environment; (4) availability of capital; (5) real estate land and buildings; (6) technology R &D capacity and university/industry technology transfer; (7) business incentives (tax and financial); (8) public/private collaboration in addressing key community issues; and 9) pro-business government leadership. Results of the surveys returned are presented graphically in Appendix A and will be discussed throughout this report. Because of the small number of responses, the survey cannot be considered "scientific,"nor can the results be considered "statistically significant." However, the responses do provide a snapshot of what business and community leaders consider to be important in positioning businesses and the Greater Phoenix region globally.

A second theme to emerge during the Summit was boldness and creativity. "Workforce development is a large issue that demands a large solution," said McCord. Indeed, one report,

according to McCord, suggests the country will need efforts on the scale of a new moon shot to close our skills gap. At a minimum, it is going to take a whole new perspective on the economy and new workforce tactics to outgrow the problem and flourish. On McCord's list of solutions are "aggressive reform of training and educational programs" and "large amounts of cooperation among companies and between business and government." Individual companies cannot adequately address human capital problems and therefore need to consider innovative partnerships. Public-private organizations like GPEC can help catalyze that cooperation, says McCord.

A Quick Overview of the Issue

One of the challenges to addressing the workforce problem is a common understanding of the issue. Is the human capital problem one of supply or skills? Is it an issue only for high tech companies? What is industry's role in workforce development verses government's role?

Although the issue is complex and each community has unique challenges, this is essentially the story:

- **The workforce deficit is about quantity and it is about quality.**
- **It is an immediate problem; it is also a long-term problem.**
- **It is a threat to business competitiveness; it is a threat to Arizona's competitive advantage.**
- **It has industry doing cartwheels to find solutions; it has government standing on its head.**

The following sections provide more details on each of these points. The report then concludes with a discussion of what Arizona is doing to address the issue and what GPEC might do.

The Workforce Challenge Is about More and Better Employees

Today it is not absurd to say we have more jobs than people to fill them. GPEC Summit speaker Rob McCord characterizes the quantity aspect of the problem this way: "We have too many jobs which are out people hunting." The situation is increasingly well-documented.

- The U.S. Department of Commerce recently released a report about the "national shortage" of information technology workers. Most recently, the Information Technology Association of America surveyed mid- and large-sized U.S. companies (100 plus employees) and found that there are more than 340,000 unfilled information technology jobs in the U.S.[3]

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- Other reports remind us that the deficit clearly stretches well beyond the high-technology industry. In a survey released by the American Management Association in April 1997, nearly half of 400 human resources executives polled from mid-size to large companies said skilled workers were scarce.[4] What's more, the end is nowhere in sight. Two thirds of the executives in mining, manufacturing, construction, and business and professional services predicted that the situation would intensify in the next three years.

- In compiling its 1998 list of Arizona's top 100 businesses, the *Arizona Republic* found a recurring theme—many of these companies are having problems finding employees and some are disappointed in the quality of the applicants they are seeing.[5]

- The non-scientific survey for the GPEC Economic Summit shows 80 percent of the business and community leaders polled believe workforce quantity is a very important or important factor for success. Sixty-nine percent of the same group rated the Greater Phoenix area's performance on the factor as average or below average. Less than one-third said the supply of workers in the region is excellent or very good.

But the problem goes well beyond sheer raw numbers. Rather, it centers on the skills that potential employees bring to the table—or personal computer or assembly line—as job applicants. Many students exit school without the skill sets required by business. Many adults need training to gain entry into the workforce. Again, the problem is well documented nationally and locally.

- The National Manufacturing Institute recently released its findings that 40 percent of all 17-year-olds lack requisite math skills and 60 percent do not have the necessary reading skills to hold down a production job in manufacturing.[6] The same study reveals that 60 percent of American workers indicated that they needed some form of training to qualify for their jobs. An additional 40 percent said they need to upgrade their skills once on the job.

- The GPEC Summit survey clearly shows that workforce quality is an extremely important issue. The wake-up call, however, is that 70 percent of the respondents rated the region's competitiveness as measured by the availability of quality workers as average or below average.

- Another Arizona survey indicates that over 80 percent of employers statewide say they are having a hard time filling jobs with competent, well-trained people. And, 87 percent feel that high school graduates are not being prepared for the jobs available.[7]

Taken together, these examinations of companies' human resource needs make it clear that the central workforce issue is developing "more and better" employees. However, there is yet another dimension to the issue—timing. Throw in this factor and the challenge becomes even more complex. It is, then, to supply enough workers with the "right" skills to meet employers' needs in *a timely fashion.*

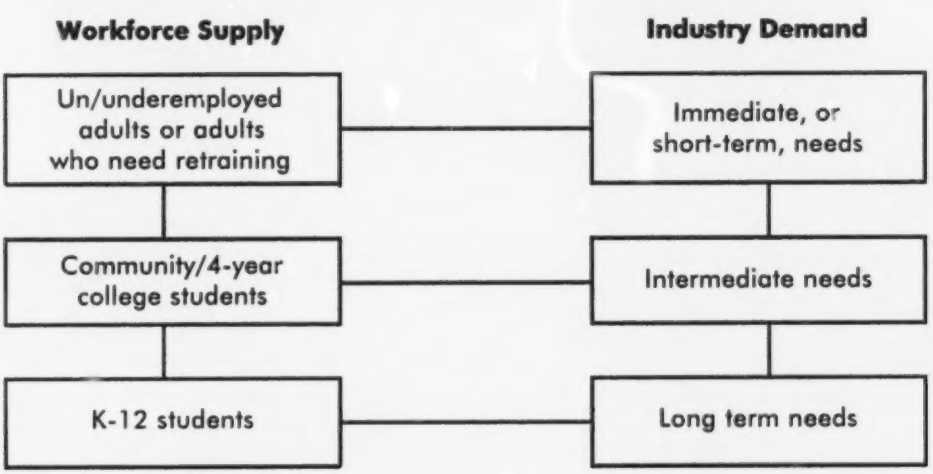
Workers Are Needed Now, Tomorrow, Next Year, and Next Decade

Consider this story of the largest producer of semiconductor manufacturing systems in the world, Applied Materials. This $3.1 billion Santa Clara, California firm is the archetypical global company of the 1990s. It has enjoyed sales growth of nearly 40 percent a year for the better part of the decade. That's an enviable situation, to be sure. But these days, its growth also presents more than a few headaches. For one thing, such growth means the company is faced with the challenge of hiring approximately 300 new employees EVERY month.[8] Every unfilled job means thousands of dollars per year—or per week—in foregone profits. What's more, the end is nowhere in sight which means human resources managers have to make sure there is a steady and ongoing supply of talent on a long-term basis.

The story is much the same in Arizona, although perhaps not as dramatic. Regardless of the industry and the need—engineering, computer programing, telemarketing, biotechnology—companies now are swamped with immediate recruitment and retention problems. At the same time, they have to figure out what capabilities they need in the future and put in place workforce delivery systems or pipelines to prevent an escalation of the problem in the future.

In theory, the people delivery system is in place. Figure 1, although simplistic, depicts a workforce "pipeline" insofar as there is a pool of potential employees to meet industry demands in the immediate, short and long term future. It shows there is a pool of potential workers, namely adults either in or able to enter the workforce, who presumably could meet industries' immediate needs. In the short term, there is a supply of potential workers who will exit community colleges or 4-year institutions with some postsecondary education and training. And, there are K-12 students who are the workforce of the future.

Figure 1. Matching the Workforce Supply with Industry Demands



In practice, however, the workforce pipeline in Arizona and elsewhere has serious glitches. The glitches come from many areas, including demographics, business practices, education policy, family situations and individual inertia.

- ***Shifting U.S. Demographics:*** As a result of the US birthrate, there are simply fewer people entering the job market today. The bottom of the baby bust was 1975, meaning there is a smaller pool of college graduates in the labor market now and going forward. At the same time, the oldest baby boomers have already begun to retire and a larger wave will follow over the next couple of decades. Arizona Public Service's situation illustrates how a company could be hit hard by the next wave: 83percent of the company's workforce is over the age of 40 and only 2 percent is under 30.[9] There is evidence that many of these "restless retirees"will stay in the workforce at least part-time. Still, unless the birthrate changes or some other source of new workers emerges, the labor pool will continue to shrink in the future.

- ***Business Practices:*** A relentless quest to downsize and cut costs in the late 1980s and early 1990s led companies to layoff large numbers of workers. Next came re-engineering when firms eliminated middle-management positions and production level workers and decided instead to employ large numbers of temporary workers and "out-source" many functions. In turn, this new reliance upon temporary workers and outsourcing led firms to downplay in-house training and promotion plans. While these strategies had positive results lowering costs, increasing profits, and providing more security for firms facing an uncertain competitive environment, they stood certain nostrums, such as career ladders and internal advancement, on their heads. For example, one result of "delayering" has been less opportunity for entry level workers to move through company ranks, acquiring new skills and experiences along the way, to fill job openings closer to the core workforce of the employer. These business practices have, in effect, put glitches in companies "internal" workforce pipelines.

- ***Public Policy:*** The most fundamental public policy impacting the supply of workers is, of course, education. Unfortunately, nearly everyone agrees that many educational systems are not preparing students for real jobs in today's workforce. As *Workforce* magazine says, "High schools and colleges are pumping out fewer and fewer students who have the skills employers need. Many firms are having to train and re-train scores of workers—even before formally hiring them—to ensure their people have the right skills for the jobs available."[10]

  But this "layer" of the pipeline is also troubled by students' unfamiliarity with various industries, especially high tech. One high school student in Austin, Texas interviewed on the *News Hour with Jim Lehrer* explains his reluctance, "no one in my family works in this field, so I have no way of knowing really what they do...I don't know if they're actually doing hard works, or brain busters or what."[11] Unfamiliarity, in turn, leads to concern about being unsuccessful in the high tech field. On the same news show, a high school teacher describes his challenges recruiting students to math and science classes: "When we're trying to recruit students for these hard classes, the first question they ask us: Is it

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required for graduation? You say, no. The second question they ask us: Is it hard? And we say, yes. The third question is: Why should I take it?"

Interestingly, 40 percent to 60 percent of all science students graduating from the U.S. universities are now foreign born.[12] This fact has not gone unnoticed and more and more high tech firms are now looking for foreign brain power to fill their top engineers and scientists positions. Scores of other companies are looking outside U.S. borders for workers. But this "pipeline" is constrained by U.S. immigration policies that limit the number of employment visas. According to one report, "In 1997, the limit of 65,000 visas for skilled foreign workers was realized in early September, the earliest in decades."[13]

- ***Family and Individual Responsibility:*** The reality is that the first responsibility to achieve employability and productivity goals rests with the family and the individual. Families are the most significant influence on the values, behavior, and learning of children and youth. There is ample evidence, for example, that parents who are uncaring, abusive, or who place a low value on educational achievement are threats to both the health and education achievement of our future workforce.[14] Much of the health habits and life-styles (*e.g.*, drugs and criminal activity) that prevent or lengthen the odds against youth being able to complete high-school or other preparatory training schedule adequate to permit them to enter the labor force arise initially from the failure of parents (and others) to identify, educate, and treat the problem. These and other strong adverse family influences (*e.g.*, split families and teenage mothers) mean that from a fifth to a quarter of the below-18 population, including especially large populations of black and Hispanic youth, are vulnerable to varying degrees to unemployability or to work lives that produce far less than optimal results.[15]

  Moreover, as President Clinton says, "What you earn depends on what you learn." And any individual who does not take responsibility for development of his or her skills and education credentials is vulnerable to a lower standard of living and future unemployability. The skills required for present and future jobs are in a constant state of flux and employees that do not keep their skills up to date are a drain on the labor pool and a negative impact on company productivity. Still, many workers do not fully appreciate the economic value of retraining or "life-long learning" for themselves and are not actively pursuing their options.

Workforce Is Key for Business Competitiveness and Regional Competitive Advantage

> *American companies today must compete not just with their domestic neighbors but with companies far away as well. What gives one company a competitive advantage over another? It's people and the knowledge they possess.*[16]

This statement by *Workforce* editor Samuel Greengard has the clear ring of basic common sense. It is people that create new technologies, new products, new jobs, and new industries. It is people and knowledge that drive innovation. And in the business world, survival has been reduced to a simple creed: innovate or perish.

"People and the knowledge they possess"are ***not*** an important source of competitiveness for **only** high tech companies. That is a common misunderstanding that needs to be quickly corrected. They are the key to economic success in a wide variety of products and services, from agriculture and apparel, to business services, retail, and software. "Just-in-time agriculture" in California is an example of the power of knowledge and innovation for more than high tech. According to Collaborative Economics, a Silicon Valley based consulting firm, "California has remained on the competitive edge of agriculture by applying new technology, improved growing methods and irrigation and innovative product marketing. In the Salinas Valley outside Monterey, California, vegetable growers work with processors to harvest fresh lettuce, tomatoes, and other produce from the fields, lightly pack them in vacuum packed wrapping, and shipping them to supermarkets to be sold as pre-made bagged salads. Because of the convenience and fresh quality, consumers are willing to pay a premium for this 'just-in-time agriculture'."[17]

If it is true that people and knowledge are the keys to competitiveness, then this is now a very important issue for states. By implication, those states that organize knowledge—research and development activities, specialized workforces, and unique business infrastructure—to support industry innovation and worker competence are most likely to have a competitive advantage in capturing new economy growth and quality jobs.

More states, including Arizona, are beginning to recognize these as the prerequisites of good economic health. Prior to the 1990s, however, the accepted wisdom was that economic health could be attained by merely reducing the costs of doing business in a state—cutting taxes, resisting higher wages, weakening or limiting regulation, and subsidizing land costs, among other measures. But if the global economy, unprecedented economic boom, and labor squeeze have revealed one thing, it is that economic expansion and profits are not predicated only on low costs. An educated and skilled workforce and technological innovation are the engines that drive the growth machine.

This is clearly the view held by most of the business and community leaders attending GPEC's 12th Economic Summit. As discussed earlier, Summit activities included a survey that asked people to rate nine factors in terms of importance for business global competitiveness. According to roughly 140 key business and community leaders in Greater Phoenix:

- Workforce quality is the most important factor for global competitiveness;
- Technology and R&D capacity rank second behind workforce quality;
- Pro-business government, access to both global and domestic markets, workforce quantity, and availability of capital are also considered important factors in global competitiveness;
- Factors considered ***least*** important for global competitiveness are: business incentives, real estate (both buildings and land), taxes/regulatory environment, and public/private collaboration on key issues.

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Acknowledging the importance of these factors and actually making changes in public policy and business practices to enhance them are two very different issues. The next section of this report describes how businesses and states are addressing the workforce challenge.

Business Is Turning Cartwheels to Find Solutions

It should come as no surprise to anyone reading this report to this point that industry is taking bold and creative steps—that is, "turning cartwheels"—to attract and retain workers today and grow tomorrow's workforce. The stakes are high, as the following examples of short and long-term strategies from around the country convey.

- ***Bonuses***—According to an April 23, 1997 *US News & World Report* cover story on the workforce crisis, companies are using bonuses to entice everyone from software programmers and MBAs to hamburger flippers and bicycle couriers.[18] For example, one manager of a Domino's Pizza in Dallas offers $200 signing bonuses and health benefits to attract delivery drivers. And according to the magazine, Ameritech, the telecommunication company, gives up to $1,000 to employees who recommend candidates who are subsequently hired. Arizona Public Service is so hard-pressed to find information-technology workers that it is paying a $1,500 bonus to any current employee who refers a qualified prospect that leads to a hiring.[19]

- ***Salary bidding wars***—A common example: A Silicon Valley mechanical engineer laid off by Genesis Technology in a downsizing move immediately found himself the focus of company bidding wars that resulted in a new salary $12,000 over his old one. Many companies are beefing up their profit-sharing and stock-purchase programs to entice workers.[20]

- ***Raiding temporary agencies***—The April 1998 issue of *Workforce* reports that more and more companies are hiring directly from temporary help agencies—and paying fat premiums to do so.[21]

- ***Recruiting abroad***—High tech industry looking for engineers and scientists are taking their search to other countries. *Workforce Online* reports: "Software producers like Oracle and Sybase are employing programers from India. Semiconductor and hardware companies such as Texas Instruments and Hewlett Packard are grabbing engineers from Taiwan and Korea. And chemical companies and pharmaceuticals—from Eastman Chemicals and Pfizer—are mining for chemists, biologists and physicists."[22]

- ***Education/training incentives***—To attract workers and keep them, more firms are paying for community college, college and graduate degrees and even giving managers training budgets. Boeing, for example, is attempting to boost hiring by providing paid-on-the-job training. Applicants who meet certain criteria can receive three months' paid training and then decide whether they want to accept the job.[23] With its "Lifelong Learning" program, Boeing is providing existing workers unlimited tuition reimbursement for any

kind of education or training an employee desires. If an engineer decides to become a medical doctor, Boeing will pay for the school. The thought is that by allowing employees to engage in learning activities outside work, they will get more into the continuous work mode at work as well.

- ***Melding training and technology***—Companies that downsized, re-engineered, or merged are turning to a technology-based approach to employee training as a means to keep costs low and increase worker productivity. Lecturer courses are being replaced with distance learning, interactive or linear video, computer-assisted programs and workbooks.[24]

- ***Training the unemployed and unskilled***—Rather than engage in a bidding war for assembly workers, Bell Helicopter decided to identify individuals collecting unemployment insurance or who were in low paying, dead-end jobs and train them in partnership with the community college. The company screened applicants, tested their skills, designed special curriculum and set up new, nontraditional assembly teams to ensure employee success. As a result, Bell reports a 78 percent drop in turnover and a 181 percent rise in productivity.[25]

- ***Apprenticeship programs***—Tired of spending millions of dollars going East, recruiting and moving people to work in Arizona, AlliedSignal recently established Workforce 2000, an apprenticeship program to help meet its need for qualified machinists.[26] Students recruited from high schools and community colleges complete a four-year program combing comprehensive shop theory and on-the-job training. Students completing the program achieve certified journey status as well as a two-year Associate of Arts in Science degree.

- ***Industry "universities"***—Some corporations start their own training universities. For example, Motorola University, which has an annual budget of about $120 million, is a corporate training and adult education facility designed to deliver a training curriculum to Motorola's more than 10,000 employees in the Phoenix region. Motorola University is also partnering with ASU's Colleges of Engineering and Business to offer a technology MBA program.

- ***Partnering with local schools/community colleges***—As a means to a workforce pipeline, businesses are becoming partners with local schools to provide students and teachers with hands-on experience in the world of work through school-to-work and related programs. Similarly, businesses are working with education and training communities to develop clear standards for what students and workers must know and be able to do to succeed in the workplace and in their industries. In Greater Phoenix, for example, industry, education, and economic development groups formed the Semiconductor Industry/Education Partnership (SIEP) to increase the number of skilled technicians available to the high-tech industry. Based on curriculum designed cooperatively with high-tech industry and Maricopa Community Colleges, SIEP trains students in semiconductor manufacturing, circuit design, and facilities maintenance. In Austin, Texas, high tech firms are reaching out to the city's teen-agers to develop into future skilled workers.[27] Their past efforts to recruit workers out-of-state did not pay off because of the high costs of bringing them to the state and the rapid turn over once they got to

Texas. Thus, the companies partnered with the city, chamber of commerce, community colleges and high schools to introduce high school kids to high tech careers.

- ***"Cultivating a cool culture"***—According to *Workforce* magazine, many companies find paychecks and benefits are not enough to attract and retain the right employees and therefore are working on becoming "cool places to work"—that is, different, non-traditional, cutting edge.[28] This means causal dress, virtual teams, domestic-partner benefits, flexible schedules and onsite daycare.

- ***Partnering with other firms***—The Arizona Optics Industry Association, a group of 145 firms located primarily in Pima county, put assistants in eight local schools to promote careers in science and also developed specialized technician curricula for community colleges. The San Francisco Hotels Partnership Project operates a joint training project for the employees of major hotels in the San Francisco area. Employees identified the core skills to be emphasized in the training and helped select the instructors. Since the program began in 1994, participating hotels have reported increases in customer satisfaction ratings.[29]

- ***Other novel approaches***—National media are reporting that the competition for workers has inspired some recruiters to try unusual approaches.[30] For example: Intel sent out a mailer to 14,000 engineers, offering a seven-day trip for two to Hawaii to all who join the firm. IBM set up a recruiting tent near sunbathers in Daytona Beach, Florida during spring break. Cisco Systems, a computer networking company hiring employees at the rate of 1,200 a quarter, links its on line recruitment site to the home page for Dilbert, the comic-strip much loved in San Francisco.

Government Is Standing on its Head to Find Solutions

The role of federal and state governments is fundamental in workforce development. The big players are, of course, the service providers, including K-12 schools, community colleges, universities, and public job training programs, and the funders and administrators. At the federal level, there are some 15 agencies administering 163 workforce development programs. In Arizona, there are a minimum of five agencies administering 34 such programs. Combined, these programs provide about $180 million annually to train and upgrade the state's workforce. Monies are administered by the Governor's Office, Arizona Department of Commerce, Arizona Department of Economic Security, Arizona Department of Education, Arizona Industrial Commission. Recently added to the mix are welfare-to-work administrators and programs.[31]

So how are states approaching the challenge of developing more and better employees? For years, states tackled workforce development through a wide collection of independent, often identical services to respond to the needs of citizens and businesses as each individual agency or program defined those needs. Not surprisingly, this approach received a lot of criticisms for being fragmented, uncoordinated, unresponsive to business needs, and generally ineffective. In response to these criticisms, states, one-by-one, have begun crafting a new approach to

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workforce development that departs dramatically from the past. Essentially, states are concluding that to really be of service to businesses and different populations they need to be able to offer easily accessible, customized responses to expressed business and citizen needs, not just to trot out a catalog of training programs and school systems that may or may not suit.

Figure 2 illustrates the new direction for workforce development. It is too soon to claim that states have successfully overhauled their workforce development systems. While a growing number can boast a number of important reforms—and however encouraging their successes—the overall impact of the initiatives developed by even the most innovative and aggressive states fall short of achieving impact appropriate to the challenge.

Figure 2. New Direction for Workforce Development

Current System	New System
■ Employer as critical observer/advisor	■ Employer as fully vested partner
■ Government as presumptive provider	■ Government as catalyst for action and change among employers ■ Government as broker of public/private partnerships
■ Compliance-driven	■ Accountability for results
■ Centralized decision-making ■ Placement oriented	■ Decentralized decision-making ■ Concerned with job retention and advancement
■ School and classroom based	■ Work-centered
■ Targeted primarily at the unemployed and disadvantaged	■ Universal, including incumbent workers
■ Focused on entry-level skills	■ Focused on transferable skills and portable credentials
■ Works primarily with single employers	■ Works with networks of employers grouped around similar and complementary sectors

Source: National Governors' Association, 1998.

Nevertheless, some promising, common components to state reform include:

New Teammates: workforce tightly linked to economic development and welfare reform—States such as Michigan, Texas, and Utah are combing economic development, employment services, welfare reform initiatives and employment and training into one agency to oversee programs formally in multiple agencies.[32] Other states–Oregon and Kentucky—are creating policy councils to present a "unified voice" among programs to their governors and legislatures. Public-private partnership is another approach to integration. Enterprise Florida, for example, is an incorporated public/private partnership composed of business, government and education sectors that has five affiliated partnerships dealing with: capital financing, technology innovations, international trade, business development, and workforce development. The workforce development affiliate works on One-Stop Career Centers, Welfare-to-Work, School-to-Work, and High Skills/High Wages, which is "Florida's strategy for aligning education and training programs with occupational forecasting."[33]

New Mantra: consolidation not proliferation—States are organizing themselves differently and better for workforce purposes. Typically, they are restructuring the fragmented mix of workforce programs and services, administered by a variety of agencies, into a more streamlined, integrated system. The rationale is phrased nicely in a recent report by the National Association of Private Industry Councils:

> *We have recently come to realize that we do not need more programs to make our workforce development more effective. What we need is an employment and training system, over and above the individual programs, that can look at (and understand) all of these pieces, allocate resources according to an all-encompassing plan, and set goals and evaluate the success or failure of the system as a whole rather than just its individual parts.*[34]

This reform, in other words, deals with changing the "how" of administering and implementing workforce development programs and services.

New Tasks: getting the substance right—Another common reform focuses on "what" should be the types and substance of programs and services to develop or enhance the workforce. People in the workforce development arena are beginning to probe into questions like: What type of education, employment and training is best for secondary students? Community college students? University students? Dislocated workers? Welfare recipients? Professionals? Are the services currently being provided effective? How could they be improved? In this area, states are experimenting with at least two approaches to ensuring the "what" or substance is right. They are designing more strategies for increasing employer involvement in and ownership of workforce programs. And they are redefining the goals and increasing the use of performance measures and accountability to shape program substance. Highlights of these two approaches follow.

New Customer Sensitivity: making customers an integral part of workforce development—Most states are still struggling with the tough questions about how to engage the customers—employers, employees, students and communities—more directly and

proactively in the workforce development delivery system to narrow the gaps between public education, training and employment services and employers needs, individuals needs, and communities needs. They generally recognize now that customer involvement and ownership is not a matter of adding representation on workforce development advisory boards and commissions. Rather, it requires, according to one source, "a fundamental realignment of the public and private responsibilities, and inventing new governance, organization, program and financing strategies that support both public and private interests in different and more effective ways."[35]

Figure 3 presents one example of a workforce initiative in Silicon Valley, California that tightly links employers to education and training programs as a means to influence the "what" or substance of workforce development. Not surprisingly, this region has rallied companies, schools, and government around a coherent workforce development model that has the potential to deliver multiple short and long term benefits.

New goals: "getting the job" is only one part of the workforce challenge—"The traditional focus, job placement, of workforce development efforts does not fully capture what employers, individuals, and communities need from education and training systems in the 21st century," says a report by the National Governors' Association.[36] This organization is encouraging states to adopt new goals that align better with various customer's needs: "For employers, these new systems must be far more effective than current ones at helping employers upgrade the skills of workers to levels that will enable their firms to sustain high value-added jobs, to increase productivity, and to adapt to rapid economic change. For individuals, new systems must focus on assisting individuals to acquire sustainable employment and economic independence. This includes providing employees with opportunities for on-going skill development and career progression, including special efforts to ensure access, retention and advancement for those most disadvantaged in the labor market."[37] For communities, these new systems need to ensure that a community's businesses and people have the knowledge and skills they need to compete in a global economy.

Old Tactics, New Targets: using traditional business recruitment tools for workforce recruitment—The labor market is getting so tight that some state and local economic development groups are advertising and providing financial incentives to entice workers from elsewhere to move to the area. For example, Michigan and Ohio recently launched competing national advertising campaigns to lure workers to those states, where unemployment is the lowest in nearly 30 years. And in February 1998, Michigan Governor Engler announced a $50-million job-training plan for construction and technical jobs which includes scholarships for up to 10,000 community college students, looking to get their associate's degree or certificates related to construction or technical jobs.[38]

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Figure 3. Reform Silicon Valley-Style

Still in the prototype stage, the Silicon Valley Workforce Partnership is a regional initiative that will attempt to take a comprehensive approach to workforce development in Silicon Valley. The Partnership's mission is to affect a cultural change in how the region grows its present and future workforce, as well as how it keeps the workforce continuously up-to-date. Today, companies work sporadically with local education and training organizations to focus on priority needs and address them. The Partnership aims to secure tangible commitments from at least 2,000 companies over the next 5 years for specific workforce development projects. The cumulative effect of these projects is to affect a cultural change that has a much broader, deeper, and longer-lasting impact than current efforts.

To meet present workforce needs, the Partnership is organizing cluster teams that are setting specific priorities to address immediate skilled labor shortages. For example, the semiconductor/semiconductor equipment cluster has identified manufacturing technicians as a priority-and is working with local community colleges to double their enrollment by fall 1998. The information technology cluster will focus on their urgent need for "certification ready" workers— with implementation to begin in 1999. Beginning in 1999, an annual "regional workforce scan" will also be conducted to identify immediate workforce needs, information that will be used to launch future targeted, cluster-based education and training efforts. The overarching goal of these cluster efforts is to increase the number of local graduates in specific, skill shortage areas.

To meet future workforce needs, the Partnership is working on a regional project that will give every student in Silicon Valley an opportunity to experience an information age career. The aim of the effort, currently dubbed the "Silicon Valley Game of Life," is to provide an exciting, engaging, technology-based simulation of career opportunities in Silicon Valley. Students would simulate exploration of different careers and would be supported by mentors, through internships, and other means to follow-through on their interests. The overarching goal of the effort is to increase the percentage of local students who progress into information age careers-be they engineering, marketing, management, finance—in information age companies and clusters.

To help the workforce keep continuously up-to-date, the Partnership is working on an electronic network of resources that help individuals embrace change in their work and personal lives. Silicon Valley's fast-paced environment continuously provides work-related and life challenges to the workforce. The aim of this network, called the "Virtual Neighborhood Network," is to help people connect to experts, organizations, and other resources they can use for a range of needs—from skills upgrading to family needs. The overarching goal of the effort is to create a regional focal point for individuals to begin their search for assistance—one that will be responsible for helping large numbers of Silicon Valley workers identify and use resources that, in turn, enable them m keep pace at work and home.

The Partnership is currently designing prototypes in each of these areas, with an expected implementation beginning during 1999.

Source: *Collaborative Economics*, 1998

New Depth to the "Pipeline": paying attention to early childhood—Some states (and businesses) are recognizing that nothing they hope to achieve in the areas of school reform or building a better-skilled workforce will happen unless they start paying attention to early childhood development. New "hard science"about how a child's brain develops make it clear, for example, that foreign languages should be taught in elementary school, if not before; that remedial education may be more effective at the age of three or four than at nine or 10; and that good, affordable day care is not a luxury or a fringe benefit for welfare mothers or working parents but essential brain food for the next generation. To meet the early "pipeline" challenges, states such as Colorado, North Carolina, and Oregon are beginning to regulate and subsidize child care, provide home visits to help families with their first child, and provide prekindergarten programs for low income children in such a way as to increase the likelihood of good outcomes for children and, in turn, increase the likelihood of them being strong members of the labor pool.[39]

What Arizona is Doing About Workforce Development

Arizona is currently focusing most of its efforts to revamp workforce development in three areas:

- establish a new Governor's Council on Workforce Development Policy and an Office of Workforce Development Policy in the Arizona Department of Commerce to coordinate the existing myriad of independent, overlapping programs, services, and funding sources;
- create a system that connects workforce development with economic development activities; and
- create a system that tightly links industry to the design and ownership of workforce programs and services.

The state just released for public review a draft comprehensive plan—*Arizona's Workforce Development System Comprehensive Plan*—that advances these three reforms.

The premise of the plan is that to the extent possible Arizona's cluster-based economic strategy should shape the state's workforce development efforts. Known as ASPED, Arizona Strategic Plan for Economic Development, the strategy was developed in 1992 through a partnership of Arizona Department of Commerce, Greater Phoenix Economic Council, Greater Tucson Economic Council and the Enterprise Network. In preparing the strategy, the state took nearly a year to analyze its economy in a global context or, more specifically, to understand which of its industries had the following characteristics:

- Export orientation: many of the companies in the industry sell products or services to companies outside the region;

- Concentration: employment in the industry is more concentrated in the region than the national average, and the industry is an existing or emerging area of specialization for the area;

- Significant size or rapid growth: the industry is a significant size or, if new, has an above average growth rate compared to that of the U.S. as a whole;

- Business interdependence: businesses relate to each other through the buyer-supplies "food chain," as competitors, or as partners.

Industries meeting these criteria are called clusters because they are geographical concentrations of competitive firms in related industries that do business with each other and that share needs for common talent, technology, and infrastructure. They are important to identify and focus on because, as Harvard Business School Professor Michael Porter argues, in advanced economies today, regional clusters of related industries, rather than individual companies or single industries, are the source of jobs, income and export growth.[40] Arizona has ten so-called clusters driving its economy.

The state is in the process of structuring its workforce development system around the view that clusters are the key customers. The draft plan states very clearly that "it is built on the platform originally set forth in Arizona's Strategic Plan for Economic Development" and that the overarching purpose is to enhance the economic growth and competitiveness of Arizona's clusters by "developing the state's human resources via improved information, education, and training programs and services."[41] Specifically, the plan provides for forecasting worker demand for Arizona's clusters, identifying training programs that do not currently prepare adults and youth for occupations in industry clusters, and integrating cluster-identified occupational competencies into all training programs in the future.

More importantly, *Arizona's Workforce Development System Comprehensive Plan* proposes a process in which company human resource managers and others who represent a cluster (*e.g.*, trade association representatives; university researchers) would be involved in specifying–precisely–the academic and basic job-readiness skills required for top-projected jobs in each cluster. The process, which is currently being pilot-tested in the Arizona High Tech cluster, first has people in the industry identify projected labor needs in terms of specific occupations, or job titles. Then, the question is asked: Who could fill these jobs? Or, conversely, what is the level of education needed to fill these jobs? In this manner, entry-level positions are defined which potentially could be filled by students exiting high schools, community colleges, and universities. The second step in the process is to convene people who perform the job, supervise the job, and train others to perform the job to quantify the skills required in order to successfully perform it and, presumably, advance through the system over time.

The state's vision is that once this "competency analysis" is conducted for each cluster, the information can be shared, at the very least, with workforce development program and service providers to assist them to better prepare their clients to gain meaningful employment. At the

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most prescriptive, the state could require publicly funded workforce development programs to incorporate cluster-specific competency standards into their service repertoire.

Naaman Nickell, business columnist for the *Arizona Republic*, called the state's plan "a solid basis for following up on the recent Governor's Summit on Workforce Development."[42] He further notes that the plan "is going to take a lot of support, assistance and leadership from the private sector—to say nothing of money....After all, the business community is going to benefit most from a plan that guarantees an adequate supply of well-educated employees."

GPEC's Role in Workforce Development

Workforce development efforts are invariably more successful and sustainable when all the people in a community have influence over policy formation, program and service alternatives, and monitoring efforts for success. In other words, progress can be sustained only when citizens, businesses, and all levels of government assume a role in making the hard choices and providing resources to make workforce development successful. In this sense, the Greater Phoenix Economic Council needs to figure out its role in meeting the universal challenge of developing more and better workers in the Greater Phoenix region and in the state. The ideas and examples that follow are intended to stimulate further discussion about GPEC's potential roles. They appear in no particular order of importance.

Among other things, GPEC could:

- ***Spearhead an initiative to establish for the first time a straight forward, data-driven process to benchmark the results GPEC's constituents (existing business as well as potential relocates) expect from Arizona's workforce pipeline, from preschool through post graduate through retraining.*** The product could be an annual Workforce Report Card or Workforce Index that would contain a number of indicators or quantitative measures to tell the region how well various components of the workforce pipeline are doing, whether we are going forward or backwards in meeting our workforce development challenges, and how we stand in comparison to other states/regions. The types of data that could be tracked include:

  - statistics about the size and skills of the Greater Phoenix and Arizona labor pool—*e.g.*, international and domestic immigration, engineering degrees awarded, number of those degrees that stay working in the state, advanced education level of the workforce, eight grade math and science scores, corporate training dollars per worker, Internet connectivity, classroom access to the Internet, pay per worker, inventions and patent applications by Arizona firms—and
  - outcome measures of specific education and training programs—*e.g.*, retention rates, wage advancement as well as job placement.

  Underlying the call for a benchmarking system is an essential and sometimes overlooked point: organizations and individuals are more likely to do that which they are asked to measure and track. Thus, if through the Workforce Report Card or Index, the Valley

emphasizes post-placement support, retention and advancement, as well as job placement and, in turn, treats workforce training, retention rates and wage advancement as measures for success and conditions for receiving funds, the odds rise that Arizona's workforce training systems will start to show results in those areas.

The quid-pro-quo for education and training service providers is that they are involved with businesses in the actual design of the performance measures and that businesses will provide future support for public programs/policies which will enable the workforce development system to achieve the results expected.

- ***Facilitate collective action among firms—bringing them together to do collectively what they cannot do individually—to address specific workforce issues.*** Many of the firms that downsized and specialized in pursuit of agility in a global economy are now finding they must recombine in new ways to pursue joint solutions to common problems in developing their present and future workforce. As one report explains, "inter-firm cooperation is quickly becoming an important strategy for (1) upgrading the skills of current workers; (2) attracting qualified new job entrants to positions with very high skill requirements; and, (3) helping the poor and poorly prepared find family supporting jobs and move toward economic independence."[43] However, many firms still find it difficult to establish cooperatives because they require time and associative skills that are in rare supply especially in smaller firms.

  Ideas for how GPEC might take the lead to catalyze inter-firm cooperation include the following:

  - GPEC can help businesses in the region jointly explore the use of intermediary organizations to provide post-employment support services to low-skill, entry-level workers. Many small-and medium-sized firms have concerns about addressing the problems of new workers who have very little work history and have serious and distracting personal and family problems. Some large corporations are establishing their own in-house post-employment programs. For example, Marriott International Corporation has established the "work-life program" that provides a range of support services including employability training classes, child care, counseling, and other family support services.[44] But small and medium-sized companies often do not have the time and resources to invest in these types of activities or services and thus are reluctant to hire disadvantaged individuals to meet their employee needs.
  - At the GPEC Summit, Rob McCord suggested several ideas that would require collaborative action to come to fruition. One is for Greater Phoenix to become a Mecca for MADMUPS (Middle-Aged Downwardly Mobile Urban Professionals) who want to "retread" into technology-oriented jobs and enjoy a great sunny lifestyle while going through an affordable—and nationally advertised—training program.

- ***Work with the Arizona-Mexico Commission on a strategy to tap into the talent pool in Sonora, Mexico.*** Currently, Sonora has an abundance of engineers that could provide a limited source of potential employees for Arizona companies and, more importantly, could be networked to provide outsourcing options for Arizona companies.

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- ***Examine the feasibility of recasting a potion of GPEC's highly successful marketing skills and business recruitment experience to the task of recruiting skilled workers from elsewhere to the region.*** Such a talent recruitment strategy might also focus on marketing the region to a younger generation. For example, GPEC might experiment with placing ads in key "Generation X" publications or adding-on events targeted to younger workers or college students whenever the organization visits other cities for business recruitment and marketing purposes.

- ***Sponsor a workforce "study trip" to both energize and educate key business and community leaders around solutions found in other areas, e.g., Silicon Valley Workforce Partnership.*** Similar study trips organized by the Morrison Institute to see how other communities— Portland, Dallas, Los Angeles, San Diego—dealt with growth, transportation, air quality, and inner-city issues have proved to be extremely effective education tools and motivators of civic leadership as the participants apply the "lessons learned" from the trips to solve similar problems in Arizona.

- ***Serve as the "bully-pulpit" to get state and local policy makers to recognize that Arizona is growing a new economic base*** with an industry mix that is substantially different from the economic base of our past and that our public policy must reflect the competitive requirements that support the development and growth of globally competitive firms in key industry clusters. Since first among the competitive requirements are intellectual capital and excellent workers, GPEC can help policy makers recognize that an effective workforce "pipeline" requires investment at every layer of the pipeline, not just a re-arrangement of existing elements. More importantly, it takes time to come to fruition. More specifically and immediately, GPEC can work with the Arizona Department of Commerce to finalize and quickly implement the state's new comprehensive workforce development plan. It is also timely to weight in on the development of new standards for school facilities under Students FIRST to ensure they align with what businesses know the competitive requirements to be in a global economy.

- ***Sponsor with ASU a "skills scan" session with business representatives from a different Arizona cluster each year.*** In coming together, businesses could scan their external and internal business environment, begin to project future positions and skills, and forecast future competency trends. Such an event would potentially benefit companies with no or limited HR/ workforce forecasting and planning divisions and would also benefit universities (*e.g.*, engineering and business schools) that need up to seven years advance notice to change curricula and get the first crop of newly trained students out the door.

Conclusion

The economic facts of life—technological advances, global competition, further company downsizing—would appear to dictate continuous education and training in the workforce in order to keep pace with the ever changing world and to enhance the ability of individuals to contribute to the economy and society. Moreover, these economic trends indicate that quality of intellectual capital will become even more of a competitive advantage than it is now for regions competing against one another for a prominent place in a world economy. Taken together, these developments have enormous implications for workforce development strategies. It means significant weaknesses in the existing education and training systems, from preschool through post-graduate, must be overcome. But it also means that regions will need to find better ways to anticipate future workforce challenges (*e.g.*, the changing nature of work, increasing reliance on technology in nearly all industries, increasing threats to at-risk child, youth and young adult populations being an integral part of future labor pools) and act quickly to address them.

Appendix A

GREATER PHOENIX
ECONOMIC COUNCIL

ECONOMIC SUMMIT XII:
CRITICAL SUCCESS FACTORS FOR
GLOBAL COMPETITIVENESS

TUESDAY, APRIL 21, 1998

SPONSORED BY:
WELLS FARGO BANK

CRITICAL SUCCESS FACTORS FOR GLOBAL COMPETITIVENESS

- **WHAT IS IMPORTANT?**
- **HOW ARE WE DOING?**

YOUR THOUGHTS ON THE ISSUES...

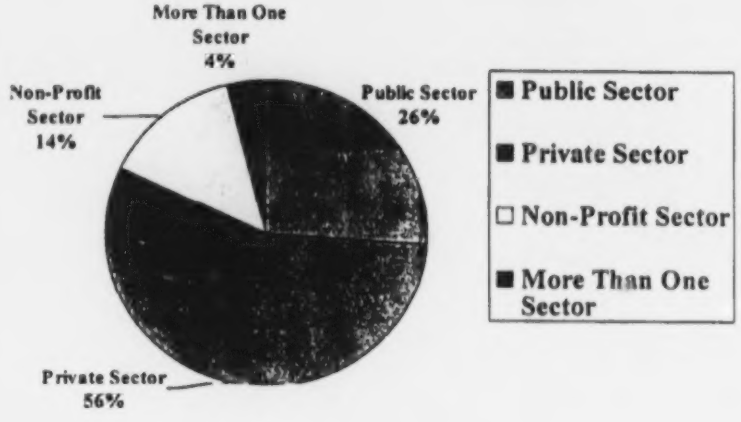
A survey of Summit attendees compiled by:

Morrison Institute for Public Policy

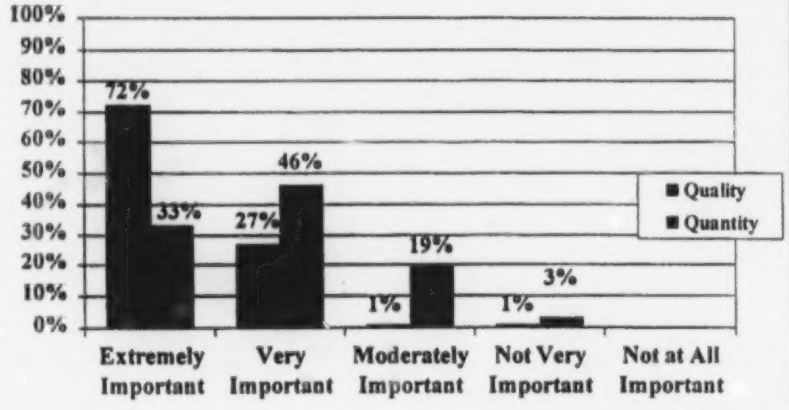
THE ISSUES

- **WORK FORCE - Quality/Quantity**
- **ACCESSIBILITY TO MARKETS - Domestic/Global**
- **TAXES and REGULATORY ENVIRONMENT**
- **AVAILABILITY OF CAPITAL**
- **REAL ESTATE - Land/Buildings**
- **TECHNOLOGY - R&D and Technology Transfer**
- **BUSINESS INCENTIVES - Tax and Financial**
- **PUBLIC/PRIVATE COLLABORATION**
- **PRO-BUSINESS GOVERNMENT LEADERSHIP**

WHO RESPONDED



SUCCESS FACTOR: WORK FORCE (QUALITY/QUANTITY)



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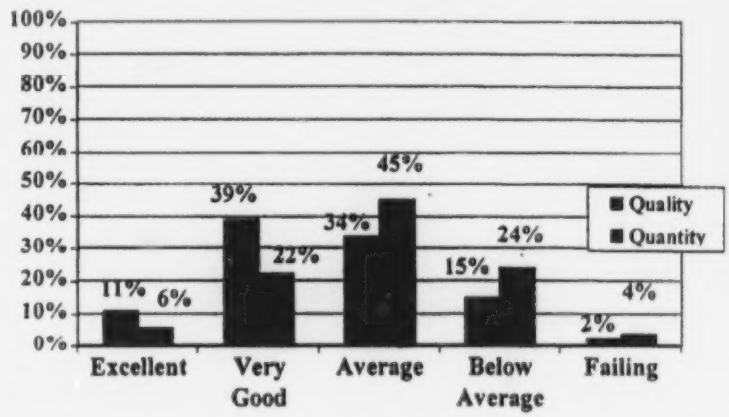
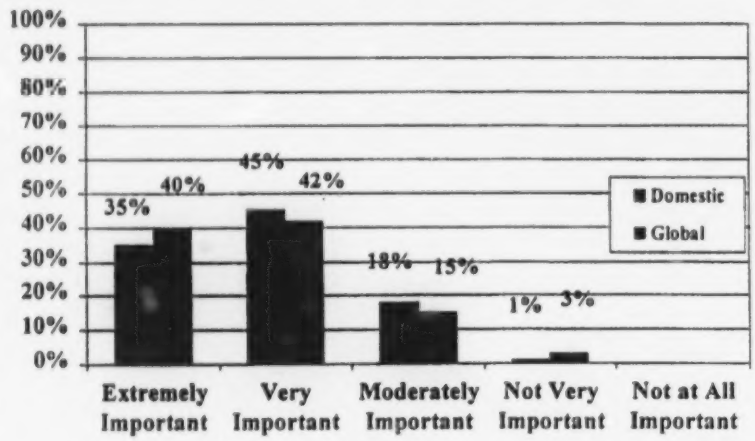
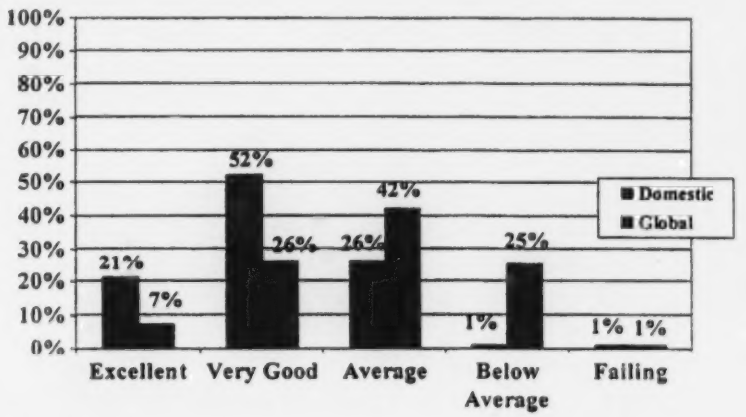
COMPETITVENESS SCORE: WORK FORCE (QUALITY/QUANTITY)



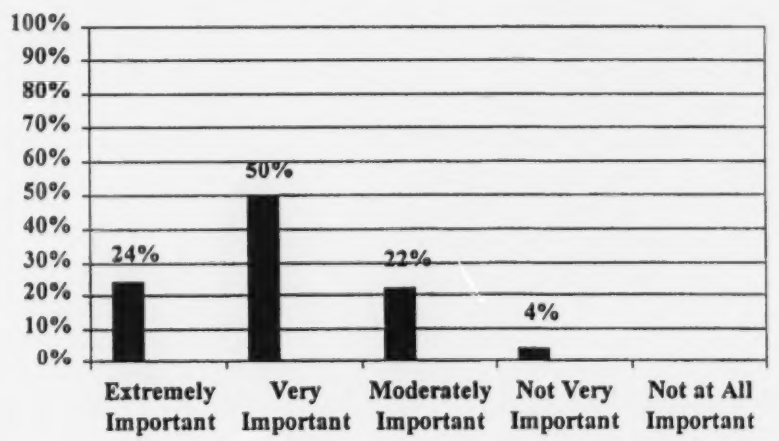
SUCCESS FACTOR: ACCESSIBILITY TO MARKETS



COMPETITIVENESS SCORE: ACCESSIBILITY TO MARKETS



SUCCESS FACTOR: TAX/REGULATORY ENVIRONMENT



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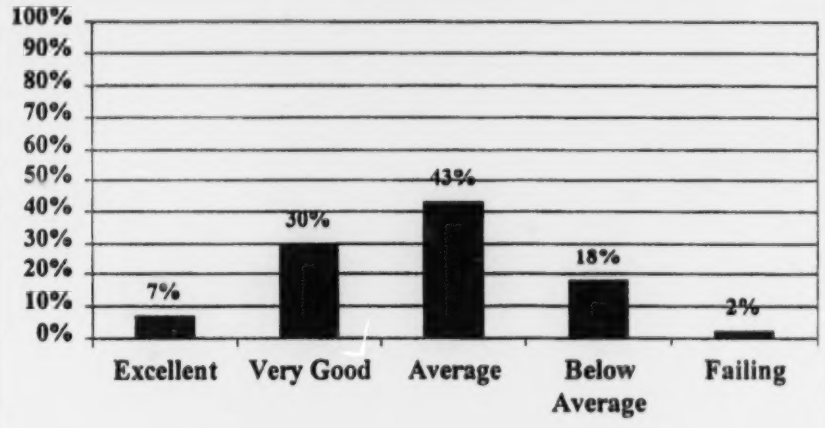
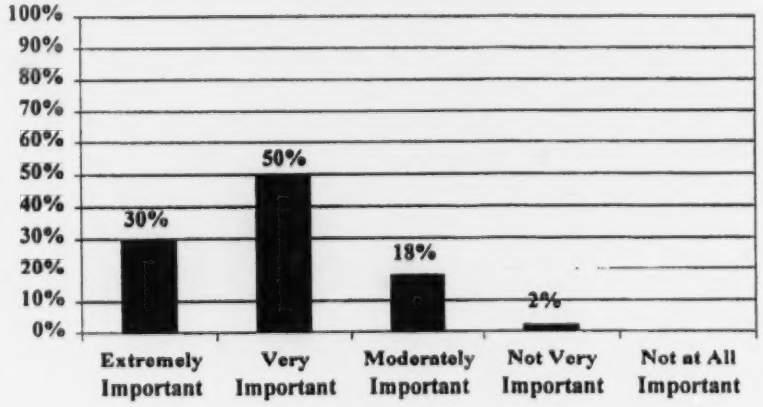


SUCCESS FACTOR: AVAILABILITY OF CAPITAL



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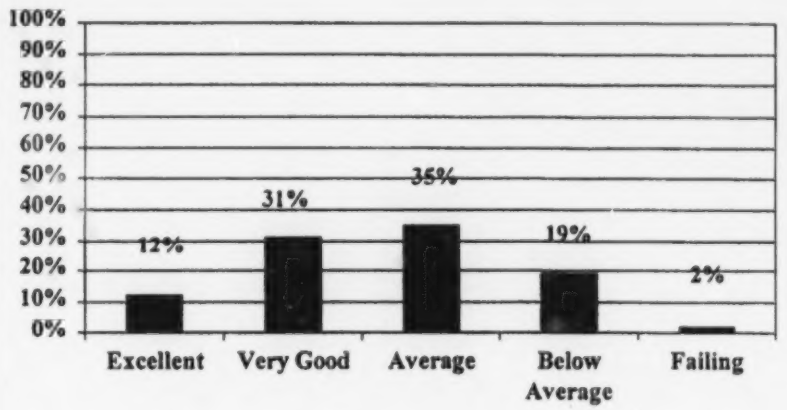
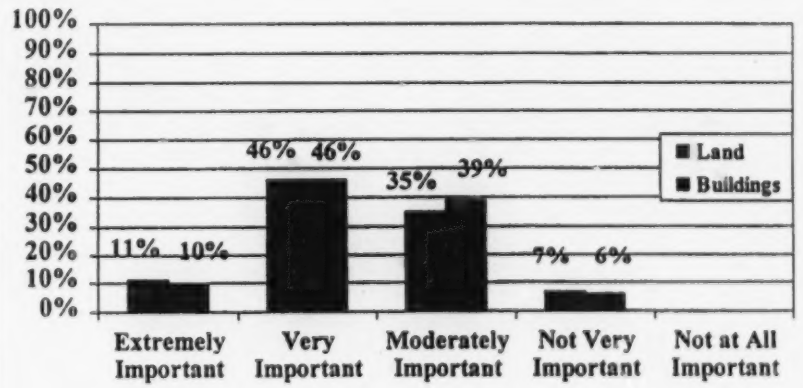


SUCCESS FACTOR: REAL ESTATE (LAND/BUILDINGS)



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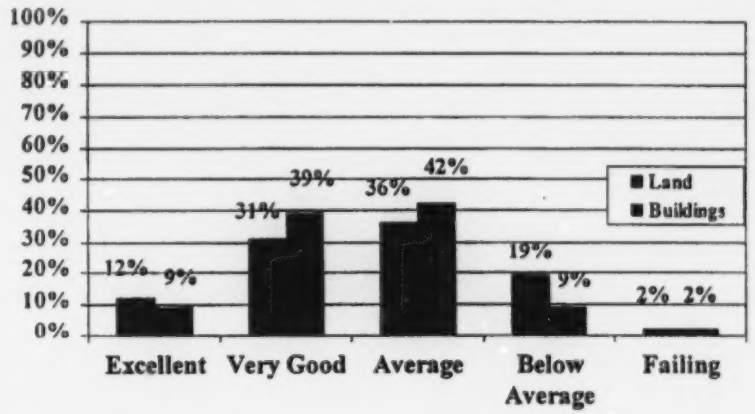
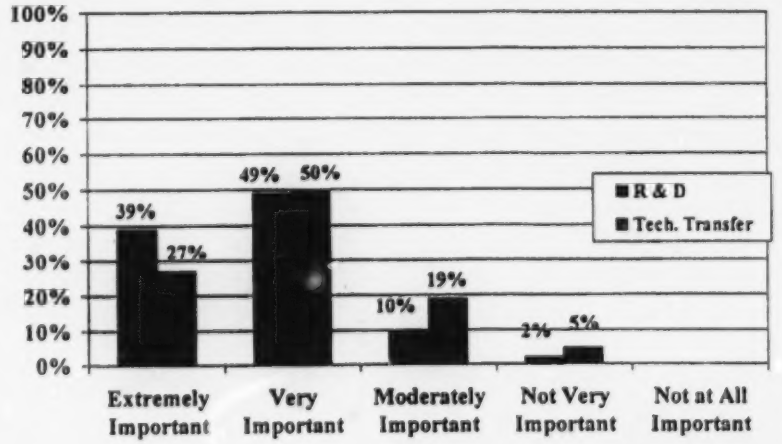


SUCCESS FACTOR: TECHNOLOGY (R&D/TECH. TRANSFER)



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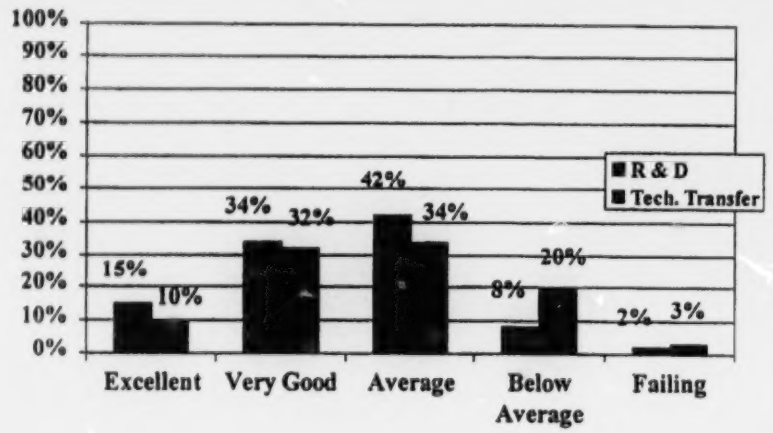
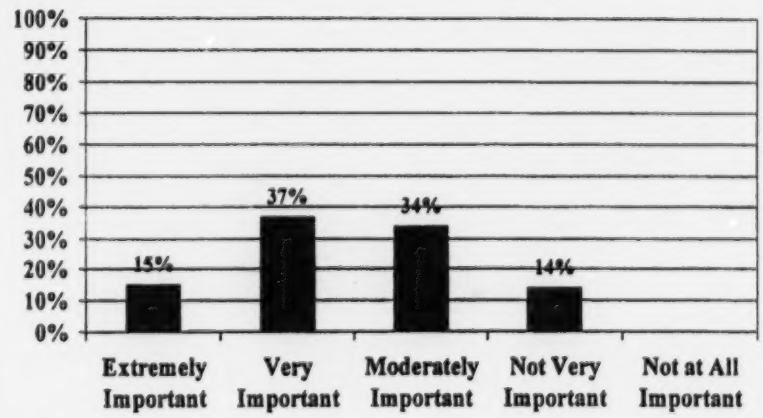


SUCCESS FACTOR: INCENTIVES (TAX/FINANCIAL)



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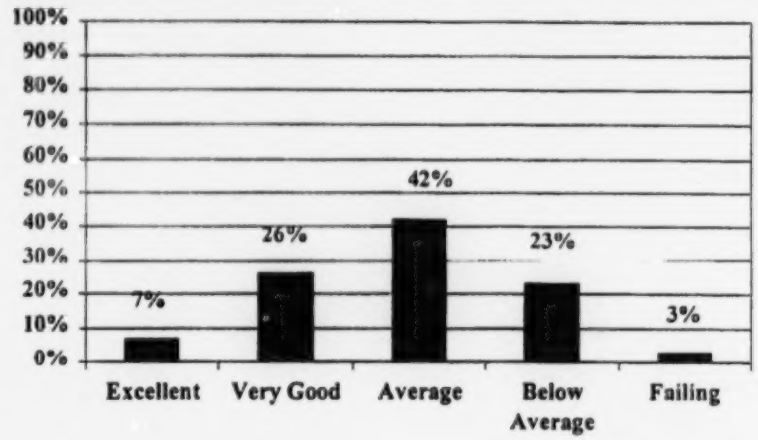
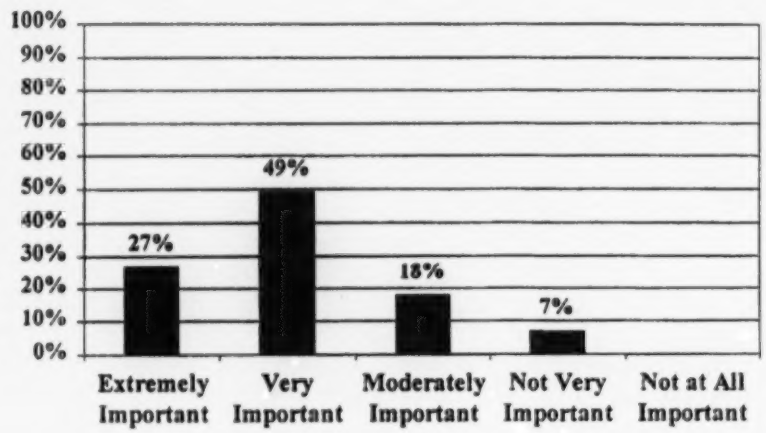
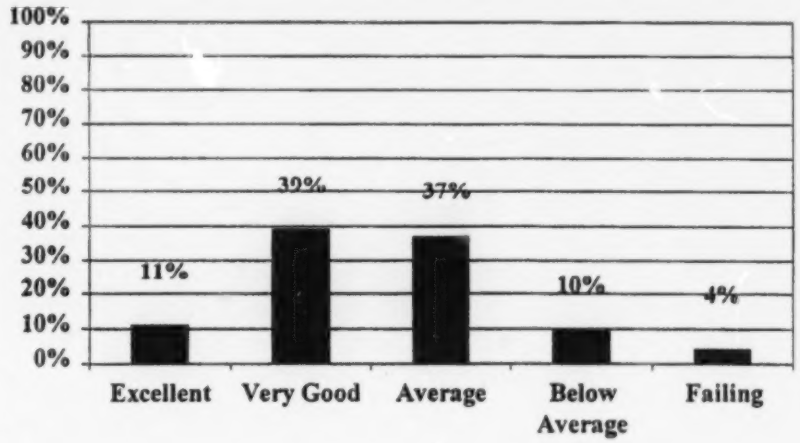


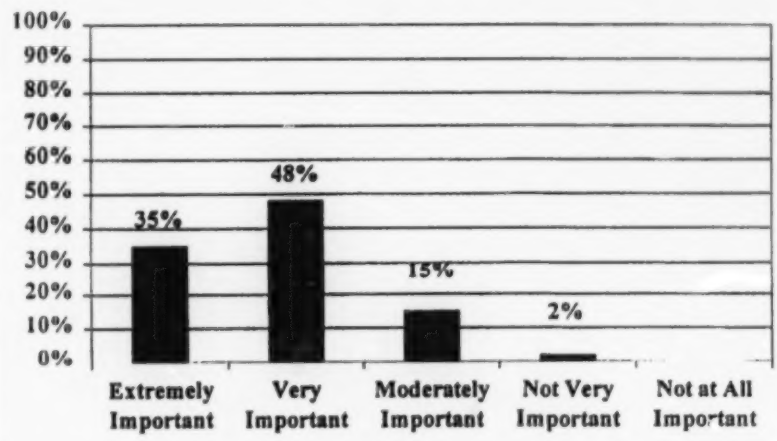
SUCCESS FACTOR: PUBLIC/PRIVATE COLLABORATION



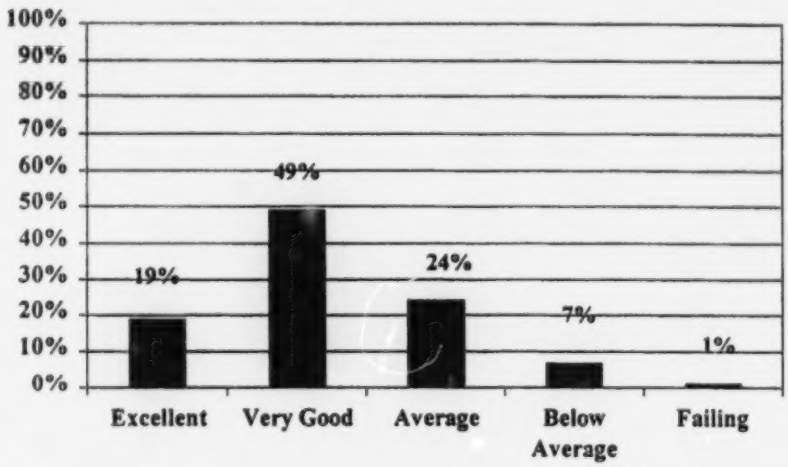
COMPETITIVENESS SCORE: PUBLIC/PRIVATE COLLABORATION



SUCCESS FACTOR: PRO-BUSINESS GOV'T. LEADERSHIP



COMPETITIVENESS SCORE: PRO-BUSINESS GOV'T. LEADERSHIP



SUMMARY-Importance for Competitiveness

- ***Workforce quality*** is most important factor for global competitiveness -- **98%** ranked it as either "extremely" or "very" important
- ***Technology (R & D capability)*** ranks second -- **88%** agreed it is "extremely" or "very" important
- ***Pro-business government leadership, access to global and domestic markets, work-force quantity, & availability of capital*** were each listed as "extremely" or "very" important factors by **80%** of respondents
- ***Less important***: Business incentives, real estate, taxes/regulatory environment & public/private collaboration

SUMMARY -Greater Phoenix's ranking

- ***Greater Phoenix ranks highest*** in work force *quality*, domestic market access, public/private collaboration on key issues, and pro-business gov't. leadership.

- ***All respondents rank Greater Phoenix as "average"*** in work force *quantity*, business incentives, global market access, technology transfer, available capital, real estate land/buildings and tax/regulatory environment

Greater Phoenix
ECONOMIC COUNCIL

Endnotes

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